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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------------|
| 10/511,321 | 08/15/2005 | Masahiro Suzuki | SON-2646 | 6662 |
| 23353 | 7590 | 03/29/2006 | EXAMINER | |
| RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036 | | | | COLON SANTANA, EDUARDO |
| | | ART UNIT | | PAPER NUMBER |
| | | 2837 | | |

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

| | | |
|-----------------------|---------------|--|
| Application No. | SUZUKI ET AL. | |
| 10/511,321 | | |
| Examiner | Art Unit | |
| Eduardo Colon Santana | 2837 | |

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on _____.
2a) This action is FINAL. 2b) This action is non-final.
3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-11 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
5) Claim(s) 1-8, 10 and 11 is/are allowed.
6) Claim(s) 9 is/are rejected.
7) Claim(s) ____ is/are objected to.
8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
10) The drawing(s) filed on 15 October 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/15/2004.
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) Notice of Informal Patent Application (PTO-152)
6) Other: Detailed Action.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 10/15/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Nishimura U.S. Patent No. 6,111,372.

Referring to claim 9, Nishimura discloses a sensorless motor driver (see all figures and respective portions of the specifications). Nishimura further discloses in figure 1, a multiphase motor (8), which in a process of a transition to a rated operations a level of back EMF generated in the coils (Lu, Lv, Lw) is detected and compared in comparator circuit (1), in which a phase error is detected

Art Unit: 2837

after comparing a last detected level (i.e. VW) with a present detected level on the same phase in regards to a common voltage (VN). Based on this comparison a frequency signal is controlled and outputted to the driving signal synthesizing circuit (3) (see Col. 3, lines 1-32). The examiner takes official notice to address that a phase error detected by comparing a last and present detected level is not defined in the claim (i.e. one ordinary skill would have thought of a zero crossing detecting level to apply as well).

Allowable Subject Matter

4. Claims 1-8, 10 and 11 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

CLAIM 1 and 10: In view of the limitations, the prior art does not disclose alone or in combination a driving apparatus having a combination of circuit means as follows. Synchronizing reference signal generating means; driving control means; terminal voltage detecting means; terminal voltage holding means; operation period setting means; and a synchronous control means, wherein the synchronous control means compares, on the same phase, a difference between the voltage value detected by the terminal voltage detecting means and a voltage value held in the terminal voltage holding means with a reference value, and controls a frequency of the synchronizing reference signal on the basis of a result of the comparison.

CLAIM 5 and 11: In view of the limitations, the prior art does not disclose alone or in combination a driving apparatus having a

Art Unit: 2837

drive output means; power supply voltage supply means; terminal voltage detecting means; terminal voltage holding means; operation period setting means; and a synchronous control means, wherein the synchronous control means compares, on the same phase, a difference between the voltage value detected by the terminal voltage detecting means and a voltage value held in the terminal voltage holding means with a reference value, and controls the power supply voltage of the power-supply voltage supply means on the basis of a result of the comparison.

Conclusion

6. The prior art made of record in form 892 and not specifically relied upon is considered relevant to applicant's disclosure to further show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eduardo Colon Santana whose telephone number is (571) 272-2060. The examiner can normally be reached on Monday thru Thursday 6:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula A. Bradley can be reached on (571) 272-2800 X.33. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2837

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Eduardo Colon Santana
Examiner
Art Unit 2837

ECS

March 16, 2006



MARLON FLETCHER
PRIMARY EXAMINER